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SILVA
Get out there™

Official partners:

Svenska
Bergsguideorganisationen

Verband Deutscher
Berg-U.Skifürer e.V.

www.silva.se

Known and unknown friends have trusted us to be a part of big and small adventures. We are suppliers to races and adventures across the Oceans, expeditions to the top of Mount Everest, through the deepest jungles of the Amazon, across deserts and of course to the North and South poles.

Don´t get lost again! – Get out there™

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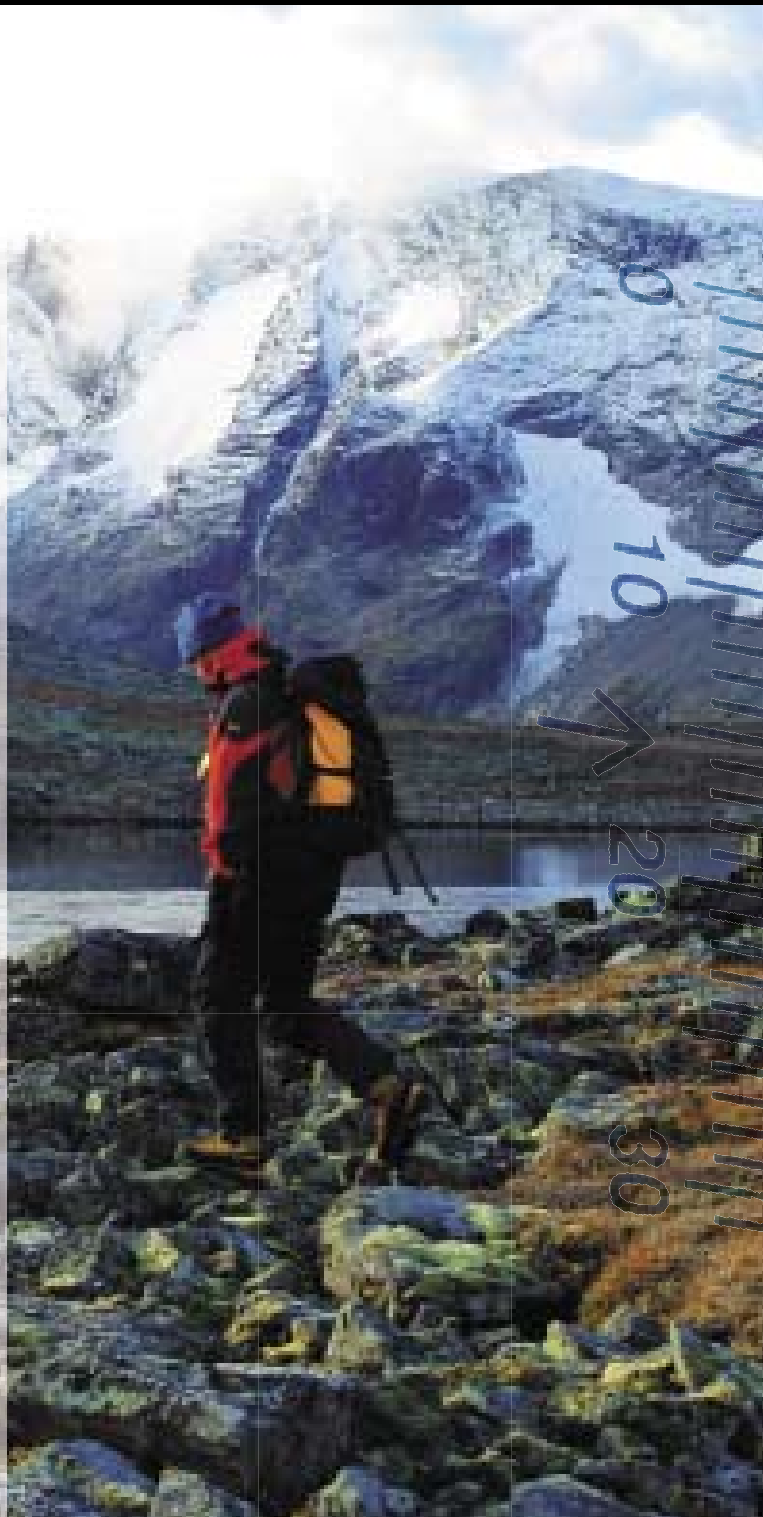
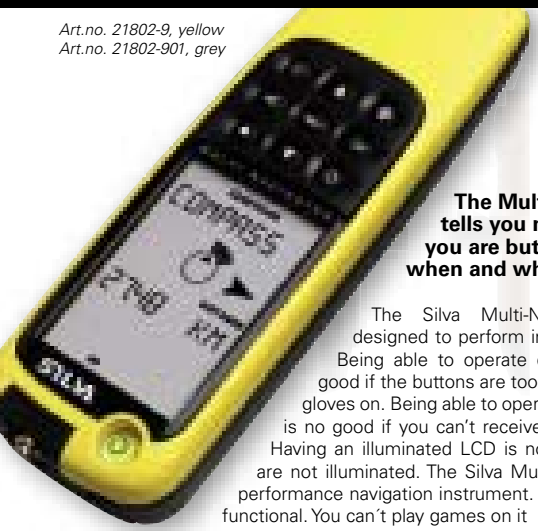
SILVA
Get out there™

Position N61°21'47" E007°56'05"
Hurrungane, Norway



*Art.no. 21802-9, yellow*
*Art.no. 21802-901, grey*



**The Multi-Navigator™ tells you not only where you are but also where, when and why to go.**

The Silva Multi-Navigator has been designed to perform in extreme conditions. Being able to operate down to -25°C is no good if the buttons are too small to operate with gloves on. Being able to operate under tree canopy is no good if you can't receive the satellite signals. Having an illuminated LCD is no good if the buttons are not illuminated. The Silva Multi-Navigator is a high performance navigation instrument. It works because it is functional. You can´t play games on it because life is not a game.

**Information whenever you need it -** Big, high contrast LCD with backlight means you can get information instantly, in poor light, in a blizzard, in a sandstorm or at night.

**Information wherever you need it -** The powerful receiver makes reception possible in areas and conditions where others may fail.

Battery life or death. Battery longevity can mean the difference between life and death. The Silva Multi-Navigator includes an electronic compass and is so frugal with power you can navigate for up to 150 hours on just two AA batteries.

**The one button GPS -** Most people will use their GPS for finding their way back to where they started. We´ve made it as simple to do as it sounds. Press a button once to automatically store and display your "home" position. That´s it. Pure and simple.

**Intellicompass -** Intelligent Electronic Compass Navigation.The Silva Multi-Navigator features a built in electronic compass that works in the same way as a traditional compass by detecting the Earth´s magnetic field. It uses extremely low power and will function stationary and on the move. It automatically compensates for the local magnetic declination to give a true compass direction, every time. Just two AA batteries will provide navigation for up to 150 hours. Highly accurate Altimeter. If you're going high, you need to know how high. Measurement of Altitude by GPS is only accurate to plus or minus 30 metres. The Silva Multi-Navigator has an on- board altimeter which is accurate to within 1 metre.

**Forward thinking Barometer -** Knowing where to go is one thing, knowing when is another entirely. By tracking and recording the barometric pressure the Multi-Navigator is able to provide a weather forecast, enabling you to avoid walking into a storm.

## Optional accessories

**Navigational Software compatibility**
The Multi-Navigator™ is compatible with many leading GPS Software on the market.

**DGPS-cable**
Connect to a DGPS receiver for increased accuracy of position.
*Art.no. 22081*

**Mounting bracket**
Same as in Vehicle kit also sold separately.
*Art.no. 21912-1*



## Optional accessories

**Global Map Planner™**
PC Software for planning your trip. Import scanned paper-maps and up/download waypoints, routes and look at your track log in your PC. Can also be used for real time navigation. Global Map Planner™ comes complete with data cable.
*Art.no. 21931-1*

**External battery cable**
Need continuous navigation for hours and hours? With this cable and a rechargeable Ni-MH headlamp battery (see headlamp section) you have the solution!
*Art.no. 21120*

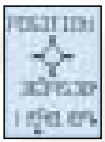
**PC interface cable**
Here is the data cable sold separately for those who like to use the Multi-Navigator™ with another compatible software. For the latest list of compatible softwares visit: www.silva.se.
*Art.no. 21946*

**Vehicle Kit**
Mounting bracket and a 12V-power cable with cigarette lighter adapter for use in a 4WD, ATV, snowmobile, balloon etc.
*Art.no. 21930-1*

Learn more about the Multi-Navigator by watching the movies at **www.silva.se**

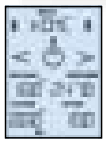
GPS navigation with clear , directional information. Store up to 1000 waypoints in 10 routes.

Electronic compass with one-degree resolution cardinal and inter-cardinal points.



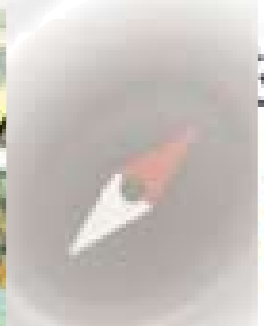
12 Channel GPS Receiver shows position.

Altimeter detects differences down to 1 metre.



Home at the touch of a button. Finding your way back is as easy as pressing a single button, essential in an emergency.

Weather forecast in 5 levels from 'Sunny' to 'Stormy'.



## Ranger

**Ranger 15**
Probably the most used compass on expeditions all over the world! RANGER 15 has been on the top of Mount Everest as well as in rain-soaked tropical jungles. It is a partner that can be trusted in the worst conditions! Large sighting mirror, rubber feet that grip the map when working to and from the map, and map measuring scales mm/inch 1:25k and 1:50k. Model RANGER 15TDCL has declination adjustment and a clinometer for measuring vertical angles.
*Art.no. 34896, 15 T*
*Art.no. 34917, 15 TDCL*

**Ranger 3**
A classic base plate compass also used by defence forces around the world. Built in magnifier for detailed map reading. Luminous stripe on the needle. Map measuring scales mm, 1:25k and 1:50k.
*Art.no. 34820*

**Ranger 27**
Small in the pocket but big in the outdoors! RANGER 27 has everything you need from a mirror-sighting compass and more! Built-in sun-watch and a pin-on jacket function for hands-free use. The hunters favorite compass! The perfect spare compass for every navigator.
*Art.no. 34952*

## Field

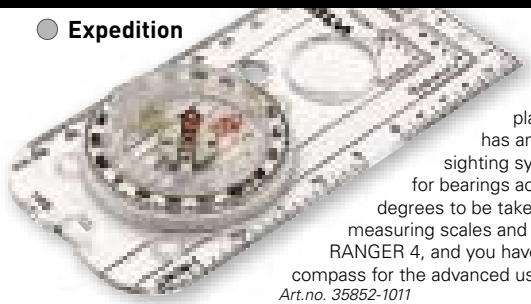
**Field 7**
Probably the worlds best selling compass model! The small size and the rounded back of the base plate makes this compass an ideal youth/beginners compass for all kind of land navigation. Map measuring scales mm, 1:50k and 1:25k. Declination scale inside the capsule.
*Art.no. 34855*

**Field 26**
A full-function mirror-sighting compass at a very attractive price-point! Large sighting-mirror and mm/inch map measuring scales. Lightweight and compact design. Perfect for land and sea navigation where accurate sightings are needed. It floats!
*Art.no. 35134*

**Field 11**
The perfect forest and sailing companion for all ages. Shows the main directions with the cardinal points in the capsule. Built-in safety whistle.
*Art.no. 35334-2001*



## Expedition



**Expedition 54**
Top of the Silva range of traditional base plate compasses. It has an unique precision sighting system, which allows for bearings accurate to +/- 0.5 degrees to be taken! Add the same map measuring scales and silicon grip feet, as on RANGER 4, and you have a top-of-the-range compass for the advanced user!
*Art.no. 35852-1011*

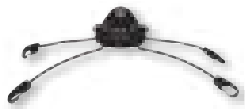
**Expedition 4**
The "full-size" base plate compass for experienced navigators. Used by different defence forces around the world. 1:25k, 1:50k, 1:63.36k, mm and inch map measuring scales. Luminous points for navigation in the dark.
*Art.no. 35692-1011*

**Expedition 25**
The mirror-sighting compass with "all" the features required by professional users such as geologists, engineers, defence forces etc. Direct access battery illumination and a bubble level for accurate horizontal adjustment. Clinometer and declination adjuster.
*Art.no. 35942-6041*

## Adventure

**58**
A vehicle compass specially designed for 4WD and any small craft including motor boats. Built-in illumination of the compass rose and deviation compensator [to compensate against surrounding magnetic fields that influence the compass].
*Art.no. 35730-0651*

**70 UN**
A unique combination of a steering compass and a sighting compass. When mounted in its holder it serves as a steering compass for sea-kayaks, micro-lights, boats and vehicles. Click it out and the next second you have a sighting compass for taking quick bearings in the field, in the air or at sea.
*Art.no. 35014, 70 UN*
*Art.no. 35014-1141, 70 UN with battery illumination*



**58 Kayak**
A compass designed for kayaking. Clips on by straps, to the deck of the kayak.
*Art.no. 36528-0601*

## Eclipse

**Eclipse 99 Pro**
The Flagship among the ECLIPSE compasses. A one-handed operation mirror-sighting compass. Has built-in clinometer for measurement of vertical angles/slopes. Base plate with magnifier and a set of InfoCards with Survival info, Instructions for use, map measuring scales, conversion tables etc are included in the rubber "shoe". This is not just a compass - it is a complete navigation system!
*Art.no. 36351-4001 (English MN)*

**Eclipse 96 GPS**
The perfect choice for the GPS-owner. Never trust the GPS alone as your navigation aid - always remember to bring a compass. The ECLIPSE 96 GPS includes international romer scales (1:24k, 1:25k, 1:50k, 1:62,5k, 1:63,36k) for plotting exact locations on the map with UTM co-ordinates (or similar). Delivered with a Lat/Lon / UTM template for plotting locations on maps with Lat/Lon system.
*Art.no. 36502-0001*

**Eclipse 97 Grip**
A prize-winning design, base plate compass. Ergonomically shaped base plate with a smooth rubber grip and a lanyard complete with a click-in safety whistle! Delivered complete with a clip-on attachment (clips on to belt, map etc)
*Art.no. 36353-1001*

## Voyager

**Voyager 8010**
A base plate compass with a traditional type of base plate. Built in magnifier for detailed map reading. Declination adjustment facility. Map measuring scales 1:250k, 1:25k, 1:24k, 1:50k, 1:63.36k as well as mm and inch.
*Art.no. 36580-5011*

**Voyager 9020**
MM and inch measuring scales. Equipped with an inclination scale for determination of vertical angles.
*Art.no. 36578-5001*

**Voyager 8040**
Equipped with a gun-sight for accurate sighting of bearings. Lid with sighting mirror and thermometer. Built-in clinometer needle for accurate measurement of vertical angles/slopes. Magnetic declination chart on top of the lid.
*Art.no. 36582-5001*

The new M-series compact headlamps offer a combination of a fantastic light and a very long discharge time for close range work by using LED technology. Compact size, low weight and rugged construction with a reflector technology, makes the M-series the ultimate choice for any headlamp user.

A headlamp is an incredible partner when doing different kinds of work in the dark. No matter where you are looking, you instantly have the light in the right direction. The M1 and M2 are a combination of a high power Halogen bulb for long range use and high power LEDs for close range use. Specially suited for advanced outdoor users, search and rescue teams, Multi-Sport teams and professional users.

**M1**
Top performance for the frequent user
Weight: 320g (incl. batteries).
*Art.no. 57003*

Charger and rechargeable battery pack included.

**M2**
Top performance for outdoor activities
Weight: 320g (incl. batteries).
*Art.no. 57002*

**M3**
The new standard for field performance
Weight: 320g (incl. batteries).
*Art.no. 57001*

| | | | | |
|---|---|---|---|---|
| **M1** | 4 W Halogen<br>3 LEDs | 75m | Rechargeable NiMH 1600mAh<br>+ charger (included) | ~1h 45min<br>LEDs: ~100h |
| **M2** | 2.4 W Halogen<br>3 LEDs | 50m | 4pcs AA (LR6) Alkaline<br>(not included) | ~2h 30min<br>LEDs: ~150h |
| **M3** | 2.4 W Krypton | 50m | 4pcs AA (LR6) Alkaline<br>(not included) | ~2h 30min |



**These are your options when you want to turn the night into day!**
With Silva high-power headlamps, you are probably getting the best light from a headlamp available on the market. Outstanding performance due to the 10 Watt and 20 Watt bulb configuration. Large reflectors and long discharge times, due to the effective batteries, are important factors for users such as search and rescue teams, cross-country skiers, mountain bikers etc. Combine with any rechargeable battery and charging set.

**480**
Extremely lightweight and with a well-fitting construction. This is probably the most comfortable high-power headlamp on the market.
Weight: 190g.
*Art.no. 57060-20*

**478**
Extremely lightweight construction with a neoprene headband for a great fit. Can easily be mounted on a helmet with the adhesive Velcro pads included. This is the choice for the all round user who wants to use the headlamp with and without helmet.
Weight: 160g.
*Art.no. 57058-20*

**471**
Quick adjustable headset - just turn the knob on the back and it fits.
Weight: 220g.
*Art.no. 57055-20*

**MICA**
A light-weight headlamp with a well-fitting construction. Weight: 160g.
*Art.no. 57059-20*

**Battery Carrier Comfort**
New battery carrier with optimal fit. Material in comfortable foam with fabric coating and elasticated straps for fixing to the body. Adjustable fixing for the battery. Suitable for all Silva NiMH batteries.
*Art.no. 57184*

**NiMH Batteries 4,5Ah - 9Ah - 9Ah**
*Art.no. 57102-45 (4,5Ah)*
*Art.no. 57104-90 (9Ah, flatpack)*
*Art.no. 57103-90 (9Ah, compact)*
*Art.no. 57101 (Spare rechargeable battery for M1)*

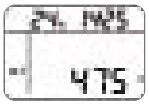
**Charging Sets**
One for 4 - 4,5 Ah batteries and one for 7 - 9 Ah batteries.
*Art.no. 57127-44 (4 - 4,5 Ah)*
*Art.no. 57127-70 (7 - 9 Ah)*

**Discharge times NIMH batteries**

| Art.no. | Ah | Charge time | 10W | 20W | Weight | Size (mm) |
|---|---|---|---|---|---|---|
| 57102-45 | 4,5 | 20h | 2h 40min | 1h 20min | 320g | 90x70x18 |
| 57104-90 | 9,0 | 20h | 5h 20min | 2h 40min | 630g | 180x70x18 |
| 57103-90 | 9,0 | 20h | 5h 20min | 2h 40min | 630g | 90x70x36 |

Above discharge times are approximate and can vary depending on the condition of the battery, the temperature in the surroundings etc.

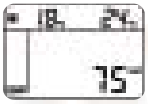
**Alba Windwatch®**
Measures precisely:
Altitude (meters and feet), Barometric Pressure (hPa and inHg), Temperature (°C and °F), Wind Chill (°C and °F), Wind Speed (m/s, knots, km/h, mph and beaufort)
Time (hours and minutes)
*Art.no. 55210-2700*



Altimeter

Wind Speed

Barometer



Temperature

**Windwatch®**
The Silva Windwatch® measures precisely and reliably wind speed and temperature including wind-chill.
*Art.no. 55200-5700*

Wind Speed

Temperature

**Batterysaver Powerpak**
- Charging 4 AA rechargeable batteries
- 12V adapter for charging most mobile phones, PDA, etc
- Powering small portable electronics such as FM-radio etc.
- Direct charging of the Silva M1 headlamp
- Maintenance of vehicle batteries
- Tilting solar panel for maximum sunlight exposure
- Power output max 12V/70mA or 6V/140mA

*Art.no. 57121*

**Batterysaver AA**
- Charging 4 AA rechargeable batteries
- Stores 4 additional AA batteries
- Perfect for any portable device such as PDA, GPS, headlamp, flashlight that utilise rechargeable AA batteries
- Tilting solar panel for maximum sunlight exposure

*Art.no. 57122*

**Nomad - A compass with its own memory**

The digital compass Silva Nomad has a memory, which means that the user can always see the set course along with any deviations from it. The Silva Nomad has display lighting, which makes navigation and outdoor pursuits easier, at any time of the day or night.

By using the Silva Nomad, the user can set a desired course to a destination in the terrain. It shows the degree to which the user is to veer to the right or left in order to keep on the correct course. At the same time as the user stores a course to a destination, the back bearing is automatically stored. This makes it easier for the user if he or she decides to return to the starting point.

The Silva Nomad can also be used at night. The compass has a clear display and background lighting. It also has an inbuilt spirit level, which means that the user can clearly see whether the compass is horizontal, for the greatest possible precision.

The compass, which is 9 cm by 5.8 cm, carries out electronic adjustment of magnetic declination. The Silva Nomad has a low battery level indicator and a lithium battery (included) which has an estimated life of up to 500 hours. The compass weighs 86 grams and a neck and wristband are included.

- Forward bearing and back bearing memory
- Off-course indicator to keep you on track
- Backlit digital display
- Adjustment for magnetic declination
- 1 degree resolution

*Art.no. 46000*

**You will regret leaving your Silva-binoculars at home when you are out there!**
Whether you are a bird-watcher, mountaineer or backpacker, this range of outdoor-binoculars offers something for everyone. We have put great effort into creating rugged, compact and user-friendly designs. Perfect, when weight and space is a problem.

*Art.no. 810742 Eterna Plus 7x42*

**Eterna™ Plus and Eterna™ Compact**
Our top models – fully comparable with the best binoculars on the market! These binoculars are designed to withstand really hard use. With an aluminium frame, rubber coating and roof prism they are rugged, compact and lightweight.

• Waterproof, nitrogen gas filled • BaK-4 optics • Emerald Fire anti-reflex coating • Extended eye relief for those who wear glasses • Opti-Visor rotating eyepieces/ ocular covers (pat pend) • Weight (Plus) 1000g (Compact) 350g • Size (Plus) 180x130x60 mm (Compact)121x95x45 mm

**Eterna™ Compact**
Same specification as Eterna™ Plus.
*Art.no. 810825 Eterna Compact 8x25*
*Art.no. 811025 Eterna Compact10x25*

**Lite-Tech™ Compact**
• Emerald Fire™ full multi-coating • Bak-4 roofprism • Waterproof • Fogproof • Nitrogen filled • Extra wide neck strap
*Art.no. 850825 Eterna Compact 8x25*
*Art.no. 851025 Eterna Compact 10x25*

**Lite-Tech™ Vision**
• Solid rubber coated design • Anti reflection coating • Comes fully equipped with carrying case and an integrated neck-strap
*Art.no. 850724 Lite-Tech Vision 7x24*
*Art.no. 850924 Lite-Tech Vision 9x24*

**Pocket**
• 8x or 10x magnification • Anti-reflection coating • Solid rubber coated design • Comes fully equipped with carrying case and an integrated neck-strap
*Art.no. 870821 Pocket 8x21*
*Art.no. 871025 Pocket 10x25*

**Pedometer Alarm**
Calculates steps, distance and calories. Built-in clock and a timer function. Equipped with a 105dB panic alarm! Perfect for walking/ jogging on your own.
*Art.no. 56020*

**Pedometer Multi**
Use the Pedometer Multi when walking or jogging. Functions: step, frequency, timer, distance and calorie.
*Art.no. 56029*

**Pedometer Dist**
The pedometer model for you if you are only interested in the distance travelled. Extremely easy to use.
*Art.no. 56022*

**Map Case Alround**
The Alround is a foldable map case to give the map a compact size when carried in the outdoors. Inside the map case there are extra pockets for compass, pens etc. The size is 28x26 cm and when folded is 28x14 cm.
*Art.no. 55049*

**Digital Map Measurer**
The electronic map measurer from Silva is a multi-function instrument featuring map measurer, calculator, mini-flashlight, keyring and a compass.
*Art.no. 55067*

**Map Measurer**
A traditional style map measurer with 8 scales: 1:750k, 1:500k, 1:400k, 1:200k, 1:100k, 1:50k, 1:25k, 1:15k
*Art.no. 55066*

**I know my position on the map and would like to go to a lake in the forest, which I see on the map – how do I do?**
The easiest way to set a compass course towards the lake is to use the Silva 1-2-3 System©. It is a simple and safe system used by navigators such as expeditions, youth organisations, mountain-guides, armies, orienteers etc all over the world and it is the main reason for Silva's market leading position.

**1.** Place the compass on the map with the edge of the compass along the desired line of travel.

**2.** Rotate the compass housing until N on the dial points North on the map. Check that the compass housing red/black north/south lines are parallel with the maps meridians.

**3.** Hold the compass in your hand and turn yourself until the red end of the compass needle (North) coincides with the red arrow in the bottom of the compass housing. The front of the compass with the direction of travel arrow is now pointing towards your destination.

NB! If using a mirror-sighting compass – angle the mirror/lid approx. 45 degrees towards yourself and hold it with straight-arm in front of you. Now, at the same time looking in the mirror to see that the compass needle aligns with the red/black N/S arrow, sight above the mirror (using the sight) towards an object in the field in line with the direction of travel.

Learn more about the Silva 1-2-3 System© and compass use by watching the movies at **www.silva.se**



**Does my compass work anywhere in the World?**
Yes, the only thing you might consider is the fact that the compass needle can dip/tilt if you travel far north or south from the area in which you bought the compass (and for which area it is intended to be used). Normally this does not affect the accuracy, but for world wide travellers we recommend the Voyager series, which due to its construction/balancing of the needle can be used in most areas without affecting its performance.

**Why does my compass show the wrong direction?**
Because of deviation, the deflection of the compass needle from Magnetic North, by a magnetic field other than the earth's magnetic field.

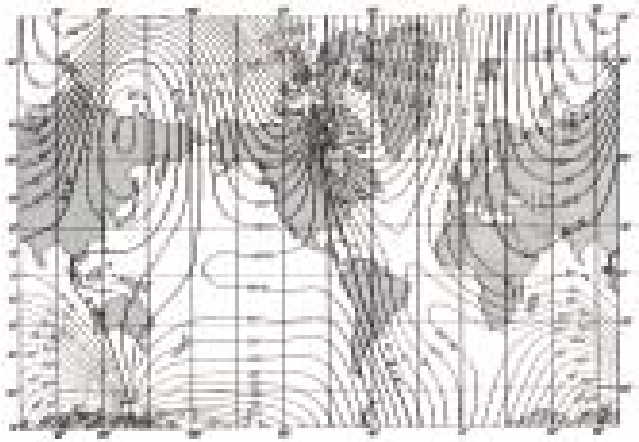
One must always be aware that this can happen. Magnetic fields exist near knives, scissors, electronic instruments including mobile phones, radios, metal fences, tins, some rings and watches, binoculars(especially the hinge screw) and vehicles. When using your compass – try to stay clear of strong magnetic fields for the best accuracy.

**How do I make sure that I care for my compass in the best possible way?**
Try to store your compass away from extremely strong magnetic fields such as strong magnets, loudspeakers, etc which in extreme cases can demagnetise the compass needle. Avoid giving compasses hard knocks, and if needed, clean the compass in fresh water. Also avoid exposing the compass to extreme temperatures above +50 degrees Celsius.

**What shall I think about before leaving home?**
Check the polarity of the needle, the general condition of the compass and that the compass functions correctly, so that you can be sure that you get the most out of your compass from Silva.

**What is magnetic declination (variation)?**
Magnetic declination is the difference in degrees, between Geographic North (to which the maps meridians are directed) and Magnetic North (to where the compass needle is pointing). It varies, depending on where you are in the world and can be found on most maps. Eastern declination means that you shall subtract the amount of the declination from the bearing obtained from the map to get a true compass course. Western declination means naturally that you should add the declination to the bearing. With some Silva compasses (such as model Ranger 15 TDCL, Expedition 25 TDCL-E or the Voyager series) you can compensate for the declination.

Magnetic declination



**Size and Weight?**
If the binoculars are to be carried around for long periods of time, it is a good idea to choose a compact model. The hiker will often find a full size pair too bulky and heavy, so they are often left at home. Lite-Tech™ Compact 8x25 and 10x25 are excellent compact models, as they are waterproof and robust! If you prioritize optical peak performance over lightweight, the choice would be Eterna™ Plus 7x42 or 10x42.

**What is eye relief?**
The ocular lens is the one through which the user sees the image in the binoculars. Eye relief is the distance from the ocular lens to the user's eye. The distance must be correct, in order to see a complete, clear and sharp image. If you wear glasses, you should choose a type of binoculars with eyepieces that can be pushed or folded in, because glasses offset the distance of the eye to the lens. Eterna™ Plus and Eterna™ Compact featuring fold-out/fold-in eyepieces

**Do I need binoculars that are waterproof?**
If the binoculars are going to be used in rain or in a marine environment it is wise to choose a waterproof model. The same is true if the binoculars will be subject to significant changes in temperature. Waterproof binoculars (preferably filled with nitrogen) keep out the surrounding air and its moisture and maintain a stable and dry condition inside the binoculars. This prevents condensation. When condensation dries out, it leaves droplet marks, which remain permanently inside the lenses.

**How much magnification do I need?**
If the binoculars are going to be hand held and also used on moving platforms (eg at sea) we recommend 7x or 8x magnification. The characteristics of 7x42 (Eterna™ Plus) are an excellent choice.

For outdoor use ashore it may be advantageous to choose more powerful magnification, depending on what you need them for.

**How important is it that the binoculars can be used under poor light conditions?**
A large exit pupil gives better light throughput and sharpness under difficult light conditions. The type of optics also play a role.

Eterna™ Plus and Eterna™ Compact are excellent binoculars for use at dawn and dusk.

**How important is the price tag?**
The optical quality of the binoculars matches the price. Bak-4 optics are more expensive and complicated to produce than standard Bk-7 optics. It takes a lot of work to produce good anti-reflection coated lenses which also affects the price.

If your top priority is optical peak quality we recommend Eterna™ Plus and Eterna™ Compact.

If you want to keep the price level down, but still get good and very price worthy binoculars, you should take a closer look at the Lite-Tech™ series. If you need small, light and easy to use binoculars, or an extra pair, Pocket should be your choice.

Eterna™ Plus with casing



**What do the numbers mean?**
For example 7x42:

"7x" means that the object in view appears 7 times larger than when visualised with the naked eye.

"42" is the size or diameter of the front (object) lens expressed in millimetres. A larger diameter lets in more light and makes the binoculars better in poor light conditions.

**What kind of prism systems are there?**
Traditional porro prism system and roof prism system.

Porro prism system binoculars let more light in and are larger and heavier and therefore most popular in areas like boating, where brightness is of key importance while the weight and form is not so important.

Roof prism system binoculars with their compact prism design are small and lightweight and therefore popular for outdoor users.

**Different glass qualities?**
There are two types of glass quality: Bak-4 and Bk-7.

Bak-4 is extremely clean and transparent and is reportedly the best binocular grade glass on the market. Bak-4 quality is achieved through a complicated and time consuming manufacturing process.

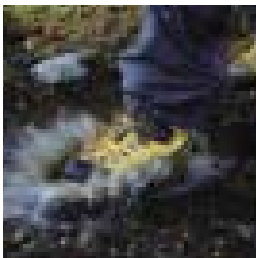
Bk-7 is the standard quality for glass in binoculars. It is less expensive to manufacture and therefore more popular for simple binoculars.

**What is anti-reflection coating?**
Stray light inside the binoculars spoils the image.

In order to enhance the viewed image, coating is applied to the lenses and/or prisms. It consists of a thin polarizing layer of magnesium fluoride. Each layer of stray light anti-reflection coating gives a brighter and sharper image. Our patented coating system Emerald Fire eliminates as much as 99.6% of the harmful UV- and IR-radiation.

**What is field of view?**
Field of view is the extent of the view you have through the glasses. Field of view is expressed at a range of 1000 meters. The greater the magnification, the narrower the field of view. Higher magnification and narrower field of view make binoculars harder to hold still without support.

Eterna™ Compact with casing



**Why shall I have a headlamp?**
Anytime you use a flashlight you would normally be much better off with a headlamp! There are several occasions when a headlamp is the perfect tool. Camping, climbing, hiking, running, professional work such as electricians, car repairmen, and search and rescue teams are all examples of frequent headlamp users.

**What kind of model shall I choose?**
If your primary goal is only light, you will in the high power range, probably find the most powerful headlamps on the market, suitable for professionals, training athletes etc. If you need a compact, long-lasting headlamp with a combination of strong light and extremely long discharge-time, we recommend one of the models M1 or M2.

**Rechargeable or alkaline batteries?**
If you intend to use your M-series headlamp often and you also have the possibility to charge between uses, we strongly recommend M1, which has the powerful halogen bulb in combination with the long-lasting LEDs. If charging possibilities are limited, the choice should be the M2 or M3 both of which can be used with alkaline or rechargeable batteries. The high power headlamps such as the model 478 require powerful rechargeable battery-packs.

**I depend on a very long discharge time – which is my choice?**
The M1 and M2 have LED technology, which will give you approx. 100-150 hours of light. The light is soft and it is perfect for close range work.

**Are the M-Series headlamps waterproof?**
Yes, they are waterproof and dust proof to the IP56 standard ensuring use in the toughest of conditions.

**Will the battery performance change in cold conditions?**
For best performance when using any headlamp below 0 degree Celsius, we recommend Lithium, Ni-Cad or NiMH batteries.

**How does an altimeter work?**
An altimeter works like a barometer, by measuring changes in atmospheric pressure. It responds to pressure changes and re-calculates these into a certain altitude above sea level.

**How accurate is a Silva Altimeter?**
Provided it is recently calibrated,you will have an accuracy down to +/-1m!

**Do I need to calibrate my altimeter?**
Yes – since the altimeter is using recent and current air pressures for its calculation, it is important to calibrate the altimeter frequently (at known altitudes). It is good to know that a difference of 1mbar equals 8 meters altitude.

**What is wind-chill?**
Wind-chill is the effect of wind speed and temperature combined. It is important to consider the wind-chill factor when selecting clothing to wear during an expedition. The Windwatch will provide you with the current wind-chill factor.
Bear in mind, that at just 20km/h wind speed and an ambient temperature of -5°C, the wind-chill effect is -20°C!

**How does a pedometer work?**
A pedometer uses a sensor that registers every step you take. After having entered your stride length,the pedometer will calculate the approximate distance you have walked/run during your trip/exercise. Accuracy depends upon accurate calibration of your stride length. The average stride length along the walk, should equal the stride length used for calibration. Remember to attach the pedometer on your belt etc at your hip for best results.

**Can I use the BatterySaver PowerPak to charge my mobile phone?**
Yes, the PowerPak has a 12V adapter to which you can connect your 12Volt cig adapter charger. Note that the max output is 12V 70mA or 6V 140mA.

**Do the Solar panels need direct sunshine to work?**
No – they will charge at normal daylight as well, but naturally it is preferable to expose the panel to full sunlight for best performance.

## Technical Data

### Navigation

**Waypoints:** 1000 Waypoints
**Routes:** 10 reversible routes, each with up to 100 waypoints
**Area calculation:** Calculates the area in hectares/acres "inside" a route.
**Track logging:** 5000 trackpoints. Automatically records your trip and stores it for display using in a compatible PC software
**Map datums:** More than 100 local map datums
**Grid systems:** More than 10 including UTM, MGRS, plus Swiss, Australian, New Zealand, Netherlands, Irish, Finnish, Taiwan, Swedish and UK grids

### GPS-Receiver

**Receiver type:** 12-channel parallel
**Position update rate:** 1 per second when in continuous GPS navigation mode
**Differential GPS:** Ready for differential corrections. (RTCM-SC104)
**Antenna:** Built-in patch antenna
**Accuracy:** 15 metres RMS. 1-5 metres RMS with DGPS

### Electronic compass

**IntelliCompass™:** Automatic compensation for Earth's local magnetic declination
**Accuracy:** Better than 3 degrees
**Resolution:** 1 degree

### Altimeter

**Altitude:** –700 m to +9200 m
**Accuracy:** Down to 1 metre assuming it is correctly calibrated
**Resolution:** 1 metre

### Weather station - Barometer

**Forecast:** Shows forecast for 12 hours ahead as: Sunny, Partly cloudy, Cloudy, Rainy and Storm Warning
**Barometric pressure range:** 300-1100 hPa/mbar
**Barometric history:** Pressure changes over the last 36 hours
**Accuracy:** +/- 1.5 hPa

### Data I/O

NMEA 0183 Out
Nexus PP Proprietary protocol
RTCM-SC104 DGPS Input

### Miscellaneous

**Internal power:** 2 pcs AA batteries (not included)
**External power:** 6-28 VDC
**Battery life:** Typical compass navigation – Up to 60 days**
Typical compass/GPS navigation – Up to 100 hours***
Continuous GPS navigation – Up to 10 hours
**Languages:** More than 10 (including English, French, German, Spanish, Portugese, Italian, Dutch, Swedish, Estonian, Czech, Norwegian, Finnish and Hungarian,)
**Operating temperature range:** –25°C to +70°C

**=15 seconds every 5th minute. Continuous barometer logging.
***= GPS position update every 30th minute, compass 15 seconds every 5th minute. Continuous barometer logging.

### Dimensions

**Size:** 170x61x30 mm
**Weight:** 254 g (including batteries)

### Standard accessories

Wrist strap
Interactive neoprene carrying case

### Warranty

2-years



**How does the GPS System work?**
The Global Positioning System is based upon 24 satellites that circle around the Earth. By receiving the signals from the satellites, the GPS receiver can calculate its position with an accuracy of down to a few metres. The GPS receiver needs to receive signals from at least 4 satellites simultaneously in order to calculate a position. The system works no matter where on Earth you are and 24 hours a day, 365 days a year.

**Why should I buy a GPS?**
A GPS is a valuable aid to navigation and in some situations, could prove essential to those who need precise POSITION, DIRECTION, ALTITUDE and SPEED. Using a GPS makes navigation even more interesting and fun. It also makes it much safer for all concerned.

**What kind of GPS should I buy?**
If your main concern is boating, or use in open terrain in normal temperatures, you will find that virtually all GPS instruments work more or less equally good. If you are a true outdoor user, with demands of functionality in extreme temperatures, under tree coverage and in extreme wet and snowy environments the Multi-Navigator™ is the perfect choice.

**Can I use a GPS indoors, or in a car?**
The GPS receiver needs to be in contact with the satellites in the sky and does not normally work indoors. However, in a car, where the GPS signal can travel through the windows, it does normally work fine. Remember though, that the GPS always works best with a clear view of the sky.

**Does the Multi-Navigator™ have maps?**
The Multi-Navigator™ is built for tough, off-road, outdoor use. A graphic display, which is needed to show a map, will not work in extreme temperatures. On top of this, the maps available today for these kinds of products are very schematic, showing major roads etc but not information about topography and other detailed information which is essential when in wild country and that can be found on the paper map.

Learn more about the Multi-Navigator by watching the movies at **www.silva.se**